The identity of *Antennaria labradorica* Nutt. has long remained unsettled. In the summer of 1930, however, Dr. M. O. Malte and I found in the herbarium of the British Museum of Natural History three fragments from Nuttall, which, until a fuller specimen is located, must stand as the type of the species. The first fragment is a slender basal offshoot 1.7 cm. long, with linear-oblanceolate, acute (but not mucronate) densely canescent pilose-tomentose leaves 1–1.2 cm. long, 0.6–1.5 mm. broad. The other two fragments are two detached heads, lanate at base; the involucre 7 mm. high, with 2–3 series of subequal narrowly lanceolate to lance-linear long-attenuate fuscous to fulvous bracts (about 24 to a head), the inner bracts serrulate; corolla 3.6–4 mm. long, reddish-brown, with exserted style; achenes glabrous, 0.4 mm. long. This is the narrowest-leaved species of the "*alpina*" series, the plant described and beautifully illustrated by Mrs. Ekman as *A. angustifolia*. Whether *A. labradorica* includes *A. alpina*, var. *Friesiana*, as Mrs. Ekman believes, I am not yet able to determine. The geographic occurrence of the latter is rather against its being identical with a plant otherwise known only from northernmost Labrador and adjacent regions and from Greenland.

GRAY HERBARIUM.

NOTES FROM THE HERBARIUM OF THE UNIVERSITY OF WISCONSIN—VII

NORMAN C. FASSETT

FOR three years transplanted specimens of the plant described by the writer as *Dodecatheon Meadia* var. *amethystinum* have been closely observed in their development from early bud to mature fruit, and 15 individuals are now growing in his garden beside almost as many of the typical *D. Meadia*. The slender habit and brilliant flowers of the former plant give it an appearance so striking that additional characters have been sought on which to differentiate it from the common species of the Middle West. These have been found in the texture and proportions of the fruit, and the length of the floral parts, and appear to warrant the proposal of specific rank for the plant of the Mississippi River bluffs.

Dodecatheon amethystinum (Fassett) n. comb. *D. Meadia* var. *amethystinum* Fassett, RHODORA xxxi. 52 (1929). Plant slender, 2–3.5 dm. high; corolla-lobes constant in color, deep violet (rarely white

but without pale intermediates) becoming when pressed dark bluish-purple; flowers 2–11(–18) in an umbel; calyx-lobes not over ⅓ the length of the expanding corolla, 3–4.5 mm. long on the mature fruit; anthers 5–7.5 mm. long; capsule narrowly cylindric, 10–16 mm. long and 3–4.5 mm. thick, stramineous, with thin, almost papery walls, its valves 1.4–2 mm. long; seeds light castaneous or olive-brown.—Bluffs along the Mississippi River from Alma to the southern border of Wisconsin, and up some tributaries for about 12 miles. It has been collected at Winona, Minnesota, and will undoubtedly be found in northern Illinois and Iowa where they border the river in The Driftless Area.

D. Meadia L. Plant stout, 2.5–6 dm. high; corolla-lobes with every shade from white to pale lilac, rarely deep lilac; flowers usually 6–30 in an umbel; calyx-lobes at least ½ the length of the expanding corolla, 4–6.4 mm. long on the mature fruit; anthers 7–9 mm. long; capsule castaneous, ovoid-conical, 10–15 mm. long and 5–7.5 mm. thick, of firm subligneous texture, its valves 2–2.6 mm. long; seeds dark brown or nearly black.

Studies in the field and in the herbarium show that *D. amethystinum* flowers at least a week earlier than does *D. Meadia.* The type was collected by the writer at Prairie du Chien, Wisconsin, on June 2, 1928, and bore well-developed fruit, with only a few withered corollas persisting. The next day, *D. Meadia* was collected near Gays Mills, about 25 miles northeast of Prairie du Chien, but only about 10 miles east of the Mississippi River; it bore only 3 expanded flowers, and a large number of buds. A specimen of *D. Meadia* collected on May 30 of the same year, near Prairie du Sac, 100 miles east of the Mississippi, bore 2 very young fruits, 10 flowers, and at least 6 buds. In general it may be said that *D. Meadia* is coming into its prime on Memorial Day, while it is difficult to find *D. amethystinum* still in flower at that time.

D. Meadia is a plant of meadows, lightly wooded ground, and particularly of railroad rights-of-way. *D. amethystinum,* on the other hand, is almost entirely confined to mossy outcrops in cool damp woods on north-facing bluffs. Dr. C. H. Bunting, who first called my attention to this plant, has made the same observation in the vicinity of LaCrosse, as has also my student, Mr. Henry P. Hansen, of that city. The only collections made in open ground were by the writer, on May 2, 1931—nearly a month before *D. Meadia* came into flower. This was on the southwest-facing grassy or lightly wooded bluffs at Fountain City; at the same time this species was collected on the other side of the hills, in dense woods, where it had buds just expanding.

Plants collected at West Salem, Wisconsin, by Mr. N. W. Rowe, were at first considered as intermediate. West Salem is 13 miles east of the Mississippi River, in the valley of the LaCrosse River. Re-examination of Mr. Rowe's two specimens, both collected at the same time, shows one, in flower, to be fairly typical *D. Meadia*, while the other, in fruit, is *D. amethystinum*. Mr. Hansen, collecting at West Salem on June 7, 1930, found an abundance of *D. amethystinum* on shaded north-facing limestone cliffs, all in fruit. But the seeds are dark as in *D. Meadia*. A single plant has the robust habit and longer sepals of *D. Meadia*, but the capsule is rather slender, thin and light-colored. Since these are not so much intermediates as they are individuals combining the characters of the two species, they may be hybrids occurring where the ranges of the two overlap.

D. amethystinum is apparently a relic species in The Driftless Area, dating back to preglacial times. The whole problem of the preglacial relic flora in the Great Lakes states is a complex one, probably not to be completely solved on the basis of our present knowledge, but a few facts may be here reviewed. In the classic paper on this problem as it concerns the Gulf of St. Lawrence region, attention is called to certain plants of western America occurring locally in the vicinity of Lake Superior, on glaciated ground. It is suggested that these species survived the Wisconsin glaciation in The Driftless Area, later to migrate northward from a region "too hot and dry for the plants which occupy the headlands and peninsulas of Lake Superior."[1] But "hot and dry" is hardly an adequate expression of conditions in The Driftless Area. Many south-facing bluffs, it is true, answer this description, and support a prairie vegetation, clearly derived from the southwest; here we find, to name only a few species, *Petalostemum purpureum*, *P. candidum*, *Corcopsis palmata*, *Bouteloua hirsuta*, *B. curtipendula*, *Artemisia caudata*, *A. frigida*, and *Solidago rigida*. Dry sandstone bluffs and sand-plains, largely covered with blueberries, are frequent. But conditions in the mossy woods of the north-facing bluffs and deep ravines may be judged by the fact that throughout The Driftless Area *Asarum canadense* and *Arisaema triphyllum* are of frequent occurrence. It is hard to conceive of *Rubus parviflorus* (abundant in northern Wisconsin), *Arenaria macrophylla* (rare on cliffs in the Gogebic Range of Ashland and Iron Counties), *Epipactis decipiens* (in Wisconsin occasionally found in woods along Lake

[1] Fernald, Persistence of Plants in Unglaciated Areas of Boreal America. Mem. Am. Acad. of Arts & Sci. xv. 317 (1925).

Superior), *Osmorhiza divaricata* (in Wisconsin known only from Port Wing, but in Michigan abundant in the Porcupine Mountains and reported from Isle Royale), *Viola adunca* var. *glabra* (dry open places, Ashland, May 23, 1930, *N. T. Bobb* no. 98), and *Potamogeton filiformis* var. *Macounii* (collected by the writer in Vilas County, new to the Great Lakes region) as having migrated northward in a body, leaving no traces, from a region where, on some exposed bluffs and damp walls of canyons we know such Canadian and Hudsonian plants as *Arctostaphylos Uva-Ursi* var. *coactilis*, *Moneses uniflora*, *Equisetum scirpoides*, *Pyrus dumosa* (more frequent in southwestern Wisconsin than is *P. americana*), *Pinus Banksiana*, *Acer spicatum*, *Primula mistassinica*, and *Rhodendron lapponicum*.

The apparently preglacial flora of northern Wisconsin and neighboring territory has its affinities with the Rocky Mountains, with the Gaspé Peninsula, and with the Torngat Mountains. There is another relic flora in The Driftless Area, spreading sometimes as far east as the Indiana dunes, which has its affinities mostly with regions south of the area of Wisconsin glaciation. *Talinum rugospermum*, on sandstone bluffs and sand-plains, is closely related to and has been confused with *T. teretifolium*, which ranges from Pennsylvania through North Carolina to Alabama.[1] These species are apparently of common descent, isolated in the two regions by glaciation. *Spiraea tomentosa* var. *rosea*[2] has a range very similar to the combined ranges of the two species of *Talinum*, occurring from northwestern Wisconsin and southern Minnesota to the Indiana dunes, and in West Virginia and North Carolina.[3] *Sullivantia renifolia*,[4] extending only slightly beyond the limits of The Driftless Area, has a relative south of the glacial limits in Ohio and Indiana, and four related species occurring very locally in the Rocky Mountains. *Aconitum noveboracense*, found toward the southern limit of glaciation in New York and Ohio, is represented in southwestern Wisconsin and adjacent Iowa by the very rare and local var. *quasiciliatum*.[5] *Elatine triandra*, not in The Driftless Area, but definitely related to it,[6] is a species of local occurrence in the West, and doubtfully native in Maine. *Geum triflorum* has apparently spread in the Middle West, extending westward to North

[1] See Rhodora xxx. 205–206 (1928).

[2] Fernald, Rhodora xiv. 190 (1912).

[3] Peattie, Rhodora xxiv. 87 (1922), calls this an endemic derivative of the coastal plain flora in Indiana, but it seems to the writer better considered as a preglacial relic.

[4] Rosendahl, Univ. Minn. Stud. Biol. Sci. no. 6: 410 (1927).

[5] Fassett, Rhodora xxxi. 49 (1929).

[6] See Trans. Wis. Acad. of Sci., Arts & Lett. xxv. 199–200 (1930).

Dakota and eastward to New York; it is represented in western North America by a plant considered by the writer to be only varietally distinct,[1] but has no affinity with the Gulf of St. Lawrence region. *Montia Chamissoi*, of the Rocky Mountains, but with no stations in the East, is known from a single locality in The Driftless Area.[2]

This distinct relic flora, practically confined to The Driftless Area, with several endemics, having its affinities in unglaciated areas to the westward or to the southeastward, may be clearly interpreted on the basis of lack of glaciation in southwestern Wisconsin. But the occurrence in the Lake Superior region of plants of the Rocky Mountains and of the Gulf of St. Lawrence area is a problem that cannot at present be solved with any degree of certainty.

MADISON, WISCONSIN.

TWO ABNORMALITIES OF PODOPHYLLUM PELTATUM.—Last spring, while out botanizing, one of the members of my class ran upon the

Fig. 1. PODOPHYLLUM PELTATUM, f. APHYLLUM.

interesting specimen, a photograph of which is here shown (FIG. 1). Instead of the regular two leaves, out of the fork of which grows the

[1] See RHODORA xxx. 206–207 (1928).

[2] See Holzinger, The Plant World iv. 41–43 (1901).